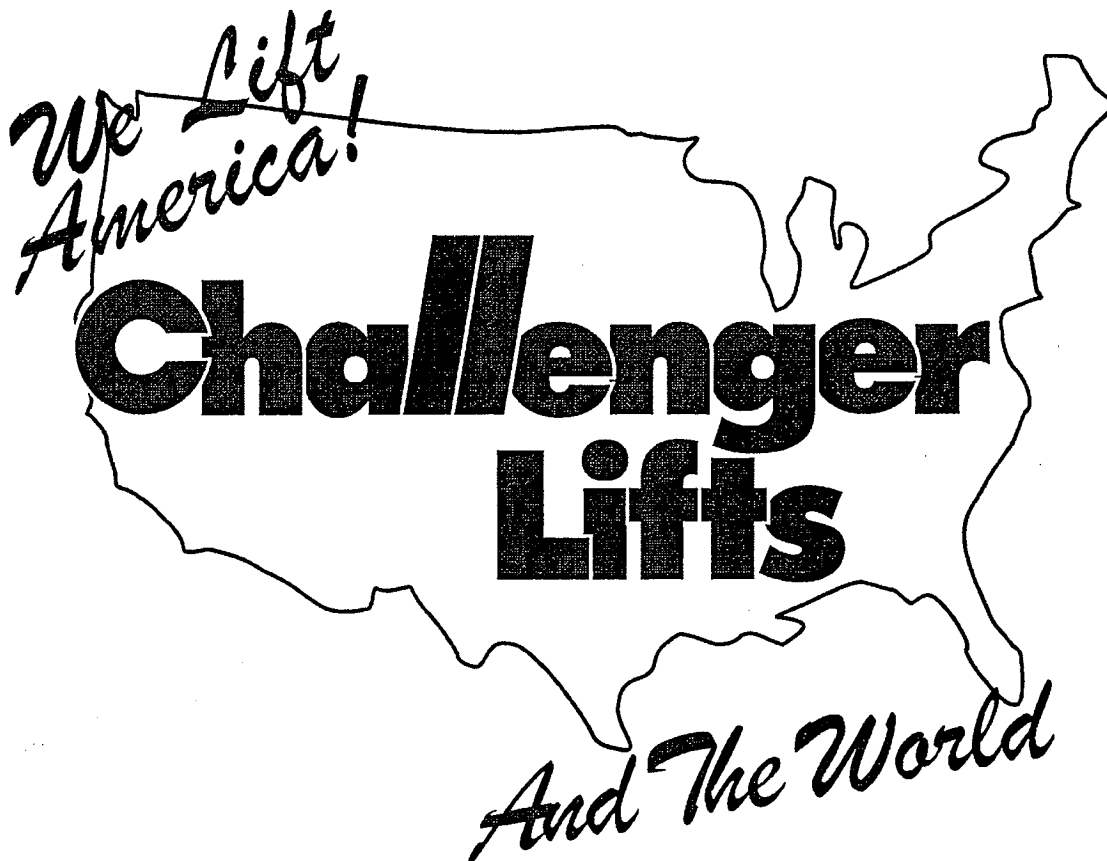


# Challenger Lifts, Inc.

## MODELS 40E, 40N & 40S

FOUR POST SURFACE MOUNTED LIFT  
(12,000 lb Capacity)

OPERATION, INSTALLATION & MAINTENANCE MANUAL



**IMPORTANT !!!**

**READ THIS MANUAL COMPLETELY BEFORE INSTALLING OR  
OPERATING THE LIFT**

200 CABEL STREET, P.O. BOX 3944  
LOUISVILLE, KENTUCKY 40201-3944

*E-Mail - [sales@challengerlifts.com](mailto:sales@challengerlifts.com)*

*Web Site - [www.challengerlifts.com](http://www.challengerlifts.com)*

**OFFICE (502) 625-0700**

**FAX (502) 587-1933**

P/N 40010

Rev. 8/9/00

**General Specifications**

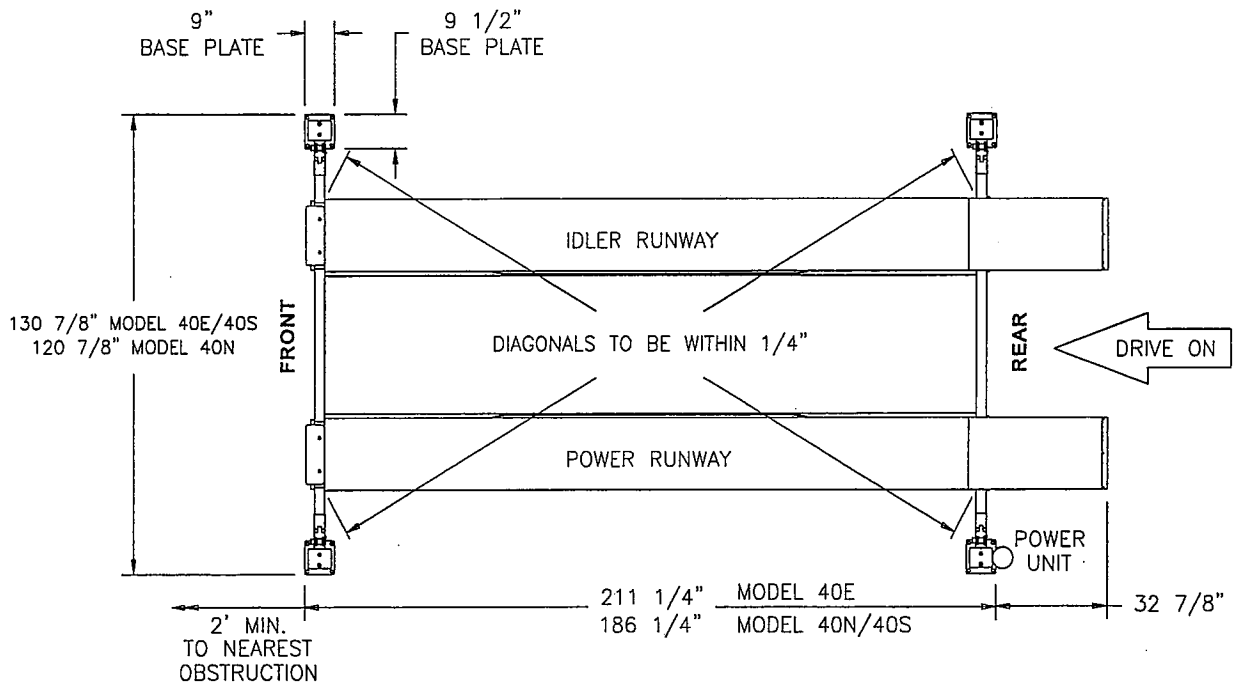
Maximum Capacity.....	12000 US Pounds
Lifting Time*.....	Approximately 80 Seconds
Lowering Time*.....	Approximately 45 Seconds
Motor.....	2HP, 230 Volts, Single Phase, 50/60 Hz
	Optional-2HP, 240 Volt, 3 Phase, 60 Hz
	Optional-2HP, 480 Volt, 3 Phase, 60 Hz

**Dimensions**

Overall Width.....	(120 7/8", 40N) 130 7/8 Inches
Overall Height.....	78 1/2 Inches
Overall Length.....	(182 1/2" Wheel Base) 244 1/8 Inches
	(157 1/2" Wheel Base) 219 1/8 Inches
Height at Full Rise.....	66 3/4 Inches
Inside of Columns.....	116 Inches
Runway Width.....	20 Inches
Width Between Runways.....	40" Min/43" Max

*\*Lifting and lowering speeds may vary depending on the type and viscosity of the oil in the system and the temperature of the oil.*

**Dimensions listed below are for layout purposes only.  
 Actual dimensions may vary.**



**Fig 1**

## **IMPORTANT!!!**

### **Before You Install**

1. Before installing your Challenger 4-Post lift, read the manual(s) thoroughly before installing. Inspect the lift to insure that it is complete and undamaged. Challenger 4-Post lifts are shipped ready to assemble to facilitate shipping and reduce damage. If it is apparent that the lift has been mishandled in shipment, or if parts or assemblies are missing, note the damage or missing part(s) on the shipping papers and notify Challenger Lifts, Inc. Immediately.
2. Be certain that the wiring in your building will handle the current required to operate this unit. It requires a dedicated 25 Amp circuit.
3. Determine the location of the lift installation. **Fig. 1** gives the overall dimensions of the lift, including the drive on ramps. The lift is designed to fit in a 12 ft wide by 24 ft deep bay. Be certain that you have the proper concrete floor to properly handle the loaded lift. The floor should be in generally good condition with no large cracks, spalling or deterioration. The minimum requirements for concrete are **4 inches minimum depth, with steel reinforcement, 3500 PSI**, cured for a minimum of **28 days**. The floor should be **level within 3/8 inch** over the installation area. No anchors should be installed within **8 inches** of any crack, edge, or expansion joint. If these conditions cannot be met, pads can be poured to accommodate the lift.
4. If pads are needed you must layout 1 ft from base plate in every direction. Minimum of 12 in. Deep steel reinforced connected to existing concrete.
5. Check with the local building inspectors and/or Permits office for any special instructions or approvals required for your installation.

### Installation Procedure

1. Layout the service bay according to the architect's plans or owner's instructions. Be certain that the proper conditions exist per the section entitled "Before You Install".
2. Position the power runway in the bay with the opening for the hydraulic and air line towards the rear of the bay. Have the power runway blocked so that you can get to the cables and cylinder. Pull cable ends out. This will help for easy install. Make sure the cables are in the proper sheaves as shown in **Fig 2**.

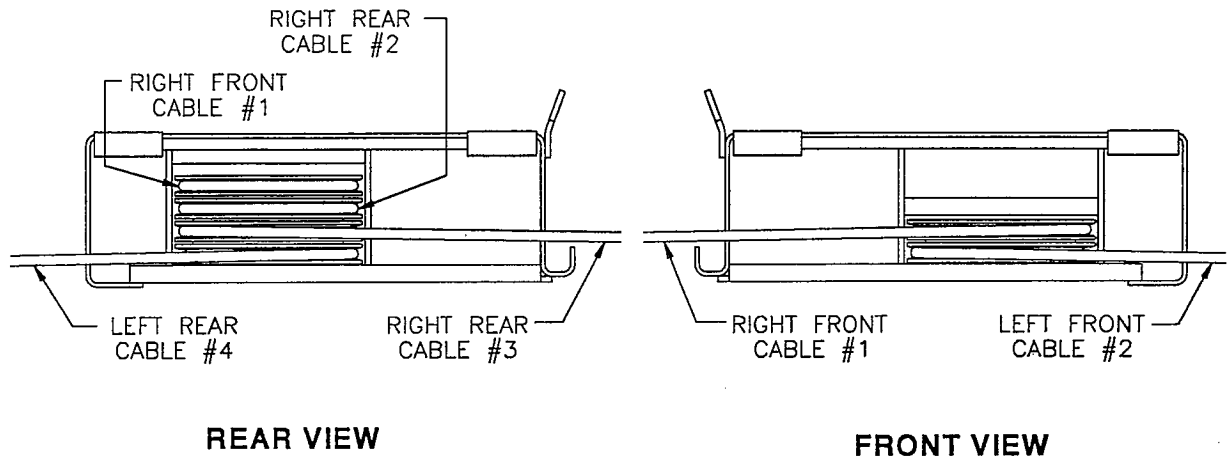


Fig 2

3. Place the crossbeams with the openings (*The ones with (2) holes not (4) holes*) in front of the power runway respectively. Feed the cables through the opening in the crossbeams to the correct end as shown in **Fig 3**. Being careful not to damage the air line that is pre-installed in the crossbeams.

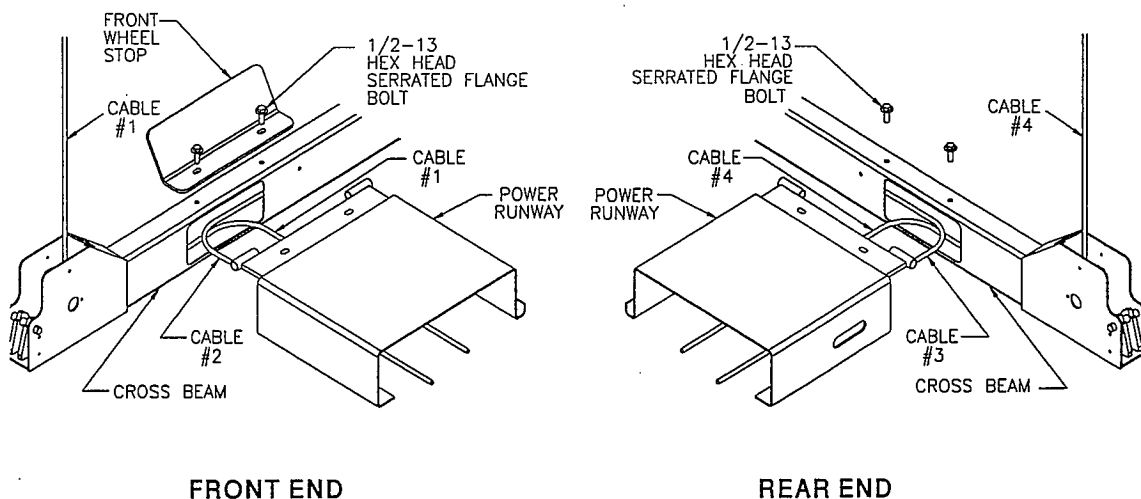
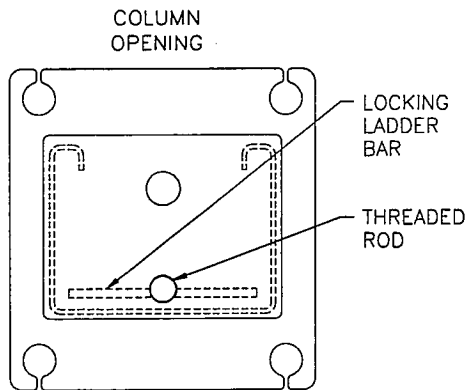
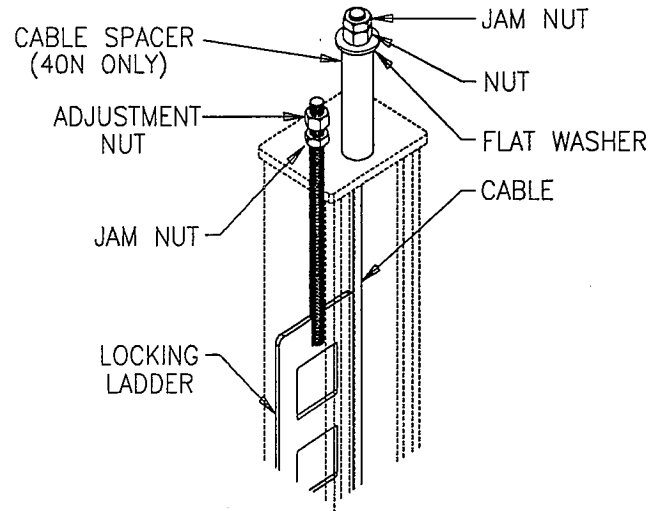


Fig 3

4. Butt (1) crossbeam squarely to power runway and align slot in runway with bolt hole in crossbeam and bolt as shown in **Fig 3** making sure cables are not crossed or pinched. Position the idler runway in line with the bolt holes on the crossbeams, (2) sets of holes for the idler runway. (1) is for 40" width other is for 43" width. Bolt remaining crossbeam following previous instructions. Insure that the wheel guard and the jack track are facing one another.



**Fig 4**



**Fig 5**

5. Place the power column (column with mounting brackets for power unit) in front of the crossbeam end where the opening in the power runway is located. Position the remaining (3) columns.
6. The locking ladder bar is pre-installed in the column. Insure that the bar is installed correctly. The threaded rod should be sticking out further on one side than the other. This side should be facing towards the opening in the column as seen in **Fig 4**. Thread the jam nut down approximately 6" to allow the locking ladder to move freely as seen in **Fig 5**.
7. Route cables through top of columns as shown in **Fig 5**. Put (cable spacer, 40N only) flat washer, adjustment nut and jam nut on stud end of cable. Screw jam nut so it is flush with top of stud. **Important !!!** Make sure the cables are in the grooves of the sheaves and slack cable roller and moving freely before operating.
8. Push column onto crossbeam end until the 5/16-18 bolt holes are in line with column opening. Apply thread locking compound (not provided) to screws. Bolt slide blocks to crossbeam, **Fig 6**. The hook end of slide block should be in the column. Raise the locking ladder and push the column up against the slide block. Lower the locking ladder in the grooves on the slide block. The locking ladder should engage the slide block by at least 1" when the lift is completely lowered. Thread the adjustment nut till it is flush with the top of the threaded stud. Snug the jam nut to the top cap of the column. Repeat for remaining column.

Models 40E, 40N & 40S  
Installation, Operation and Maintenance

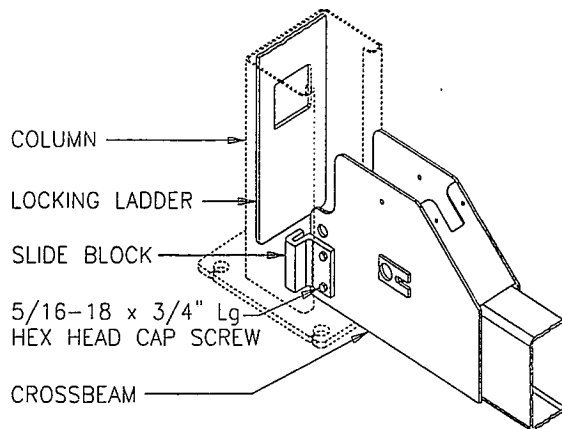


Fig 6

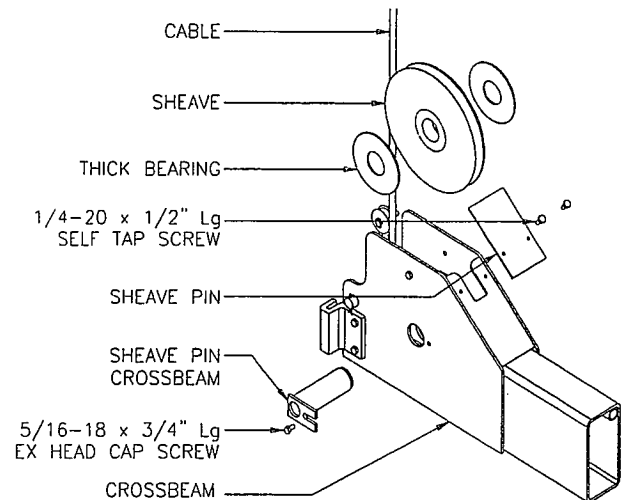


Fig 7

9. Install sheave and plastic bearings into crossbeam ends, **Fig 7**. Capture sheave and bearings with sheave pin. Bolt 5/16-18 H.H.C.S. to insure sheave pin does not walk out. Bolt rubber guard to crossbeam with 1/4-20 self tap screw. Repeat for each column.
10. Make sure the lift is located in the bay correctly and the power column is square to the crossbeam. Drill the holes for the anchors using the base plate as a template. Clean dust from the holes. Assemble the nut and washer on the anchor bolt leaving about a 1/4" of thread above the nut. Insert the anchor into the hole and tap it down to the base plate. Repeat for other (3) columns.
11. Plumb columns side to side and fore & aft using shims provided. *Do not shim more than 1/2"*. Use level no less than 24" in length to plumb columns.
12. Back the nuts on the anchors up until the threads are flush with the top of the nut and tap down against base plate. Torque anchor bolts to 75-85 ft/lbs. Re-check columns for plumb and shim as needed.
13. Install the power unit and the air button valve assembly on the power column.
14. The hydraulic line to the hydraulic cylinder (*straight end*) is pre-installed in the runway. Pull out of opening and attach to the power unit (*elbow end*). **Do Not Use Teflon Tape or Pipe Dope** on fittings.

Models 40E, 40N & 40S  
 Installation, Operation and Maintenance

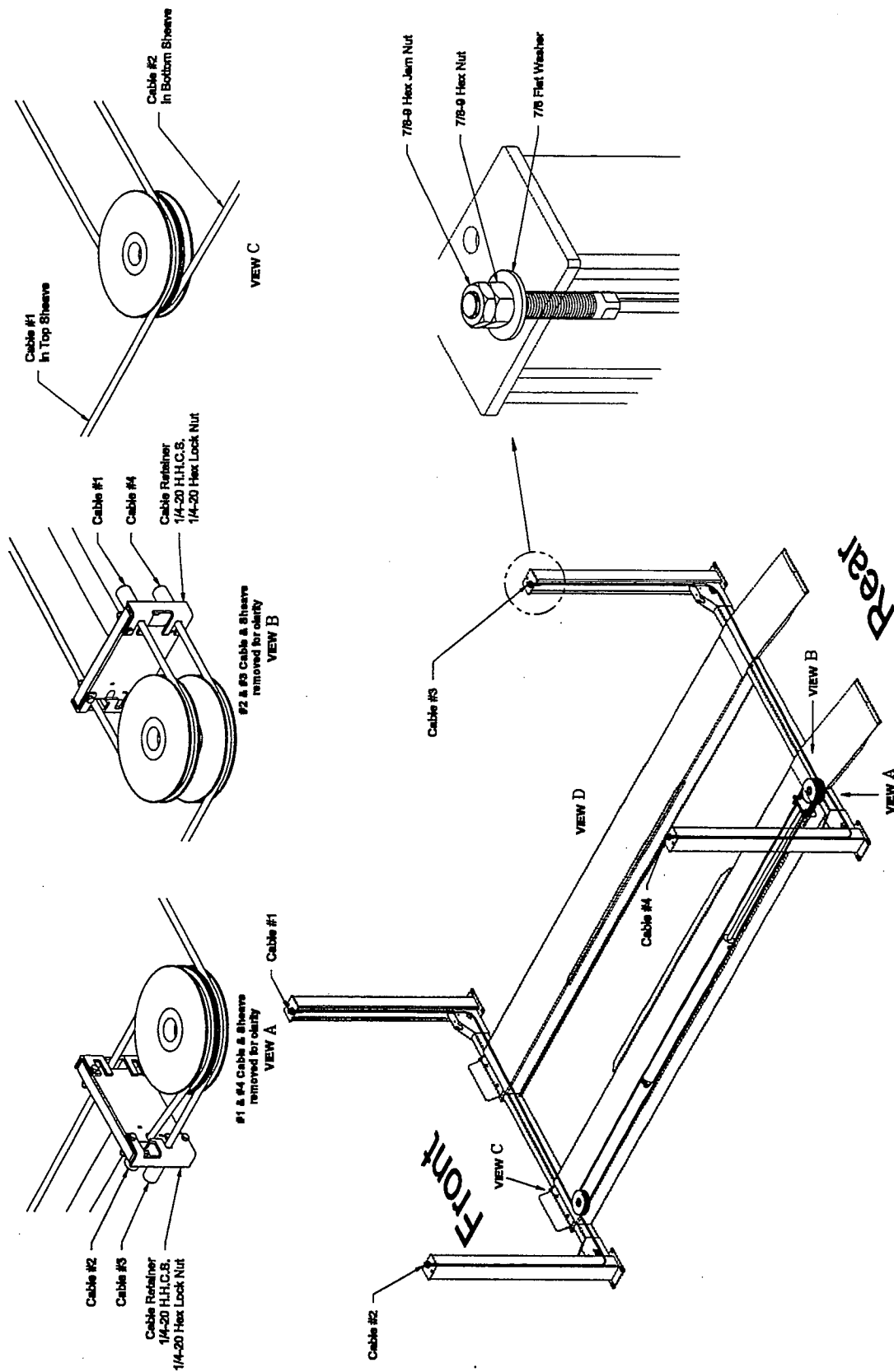


Fig 8

15. Have a certified electrician connect the power unit to a suitable electrical power source. The standard power unit is 208/230 volt 60 Hz single phase requiring a dedicated 25 amp double poll, double throw circuit breaker to operate lift at full capacity.
16. Fill the power unit reservoir with 11 quarts of 10wt anti-foam, anti-rust hydraulic oil or equal.
17. Energize the power unit and raise the lift approximately 1 ft off the ground. Level the runways and crossbeams. Find the highest point and level everything to that point by adjusting the cables. Thread the jam nut into the adjustment nut after leveling.
18.
  - a) Route air line from air valve assembly thru opening in runway to Tee. **Fig 9**
  - b) Air line is pre-installed in crossbeams. Pull coiled line from opening in crossbeam and route through runway to Tee using adhesive tabs to hold to runway. **IMPORTANT**, be certain that the air line is not kinked or pinched in any way that would restrict air flow.
  - c) Connect the button valve to a source of **clean, dry air** (*filter, regulator, lubricator*) using the hose barb and clamp provided. **Failure to provide clean, dry air will void warranty on pneumatic components.**
  - d) Air pressure required 90/120 psi.
  - e) Energize air valve assembly and insure that all air cylinders are working properly.

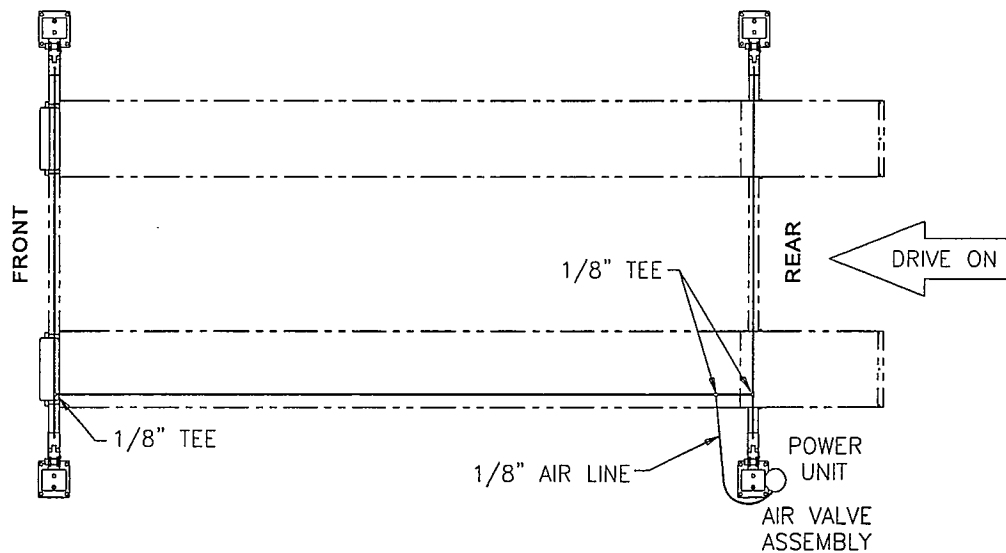


Fig 9



19. a) Raise and lower lift several times to bleed hydraulic cylinder. Hydraulic cylinder is self bleeding. Lower lift and check fluid level in reservoir. Add fluid as needed.
- b) Run lift to full rise and run motor approximately 5 more seconds. Check hydraulic hose and connections for leaks. Re-tighten fitting if leaking.
20. a) Raise lift approximately half way. Slowly jog power unit until you hear one of the locks engage. Adjust locking ladder until it just barely raises the crossbeam end. Back off ½ turn. Repeat for each column.
- b) Lower lift and raise to check for lock engagement. The locks should engage simultaneously (clicking noise). Re-adjust locking ladders as needed.

### Operation Procedure

Notice: This Challenger 40S00/40E00 Surface Mounted lift has been designed and constructed according to ANSI/ALI B153.1-1990 standard to insure that it is safe to use. The standard applies to owners, and employers, as well as to lift manufactures. The owner /employer's responsibilities, as prescribed by ANSI/ALI B153.1-1990, are summarized below. For exact wording refer to the actual standard in the literature pack.

The Owner/Employer shall insure that the lift operators are instructed in the safe use and operation of the lift using the manufacturer's instructions and the "Lifting It Right" and "Safety Tips" supplied with the lift.

The Owner/Employer shall display the operating instructions and "Lifting It Right" and "Safety Tips" supplied with the lift in a conspicuous location in the lift area convenient to the operator.

The Owner/Employer shall establish procedures to periodically maintain, inspect, and care for the lift in accordance with the manufacturer's recommended procedures to insure its continued safe operation.

The Owner/Employer shall provide necessary lockout/tag-outs of energy sources per ANSI Z244.1-1982 before beginning any repairs.

The Owner/Employer shall not modify the lift in any manner without the prior written consent of the manufacturer.

**This product is furnished with graphic safety warning labels, which are reproduced in these instructions. Do not remove or deface these warning labels, or allow them to be removed or defaced.**

## 1. Lifting a Vehicle

Drive vehicle onto lift. Set parking brake and/or use wheel chocks that are provided with lift.

When the vehicle has reached the desired working height, release the power pack button, and lower the vehicle until the safety locks are engaged. The vehicle should remain level when all locks are engaged. If one side engages and the other continues to descend, stop lowering the vehicle, raise it several inches, and try again to engage locks.

**IMPORTANT**, Before walking under the lift insure that all locks are properly engaged.

**It is not safe to work under the vehicle unless all locks are engaged, and the vehicle is level.**

## 2. Lowering a vehicle

Insure that the area under the vehicle is clear of personnel and tools.

Raise the vehicle until locks are free.

Disengage the locks by depressing the palm button and holding it.

Lower the vehicle by depressing the lowering valve handle. Watch lift to insure that the lift is lowering evenly. If not, raise lift and check all locks to insure they are disengaged before trying to lower lift again.

Continue to lower the vehicle until the crossbeams stop against the base plate. It is important to fully lower the lift to release hydraulic pressure on the system.

## Maintenance

The following maintenance points are suggested as the basis of a preventive maintenance program. The actual maintenance program should be tailored to the installation.

### Daily

Inspect the lift for loose anchor bolts (If loose tighten to 80 ft-lbs)

**All anchor bolts should take full torque.**

Inspect that lock mechanism is working properly

Check for fluid leaks and loose connections.

Check for broken parts

### Weekly

Check cables for wear or damage.

Check sheaves for wear or damage

Check fluid level in power pack reservoir.

Check for lock release activation.

### Monthly

Clean and inspect cables and sheaves for wear or damage.

Lubricate cables and sheaves with light oil.

### **Important!!!**

Failure to keep lift free of corrosive agents and solvents will lead to reduced service life, which could result in property damage and/or personal injury.

## Appendix A

### Anchor Bolt Installation

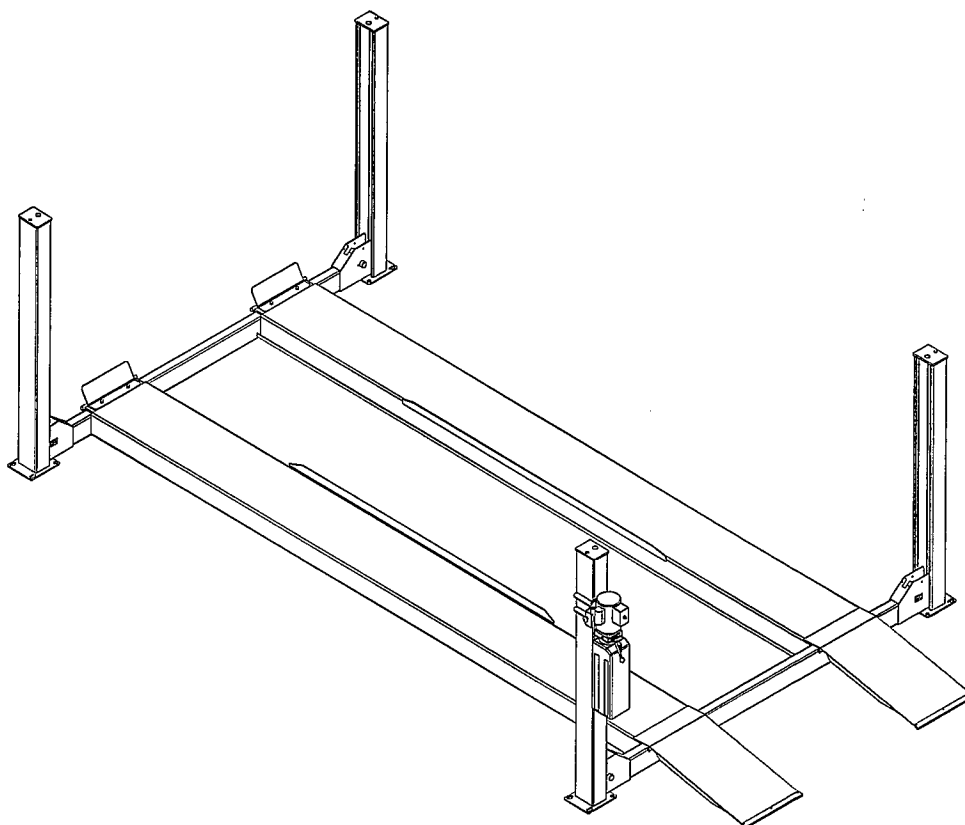
1. Insure the concrete has had sufficient time to cure - 28 days minimum.
2. Always wear safety glasses.
3. Follow the drill manufacturers safety instruction.
4. Use only solid carbide-tipped drill bits meeting ANSI B94 tip diameter standards.
5. Drill the anchor bolt holes perpendicular to the work surface. To assure full holding power, do no ream the hole or allow the drill to wobble.
6. Drill the hole at least as deep as the full length of the anchor, completely through the slab if possible.
7. Clean the hole, using compressed air and a wire brush. A clean hole is necessary for proper performance.
8. Assemble the washer and nut on the anchor bolt so that the anchor protrudes slightly beyond the nut.

**The anchor should drop easily into the hole, requiring no more than a slight tap to seat it fully.**

9. Tap the anchor through the fixture (lift base plate) and into the hole, making sure that the nut rests solidly against the fixture.
10. Tighten the nut to 75/80 ft-lbs for 5/8 inch diameter bolts.

# Parts Breakdown

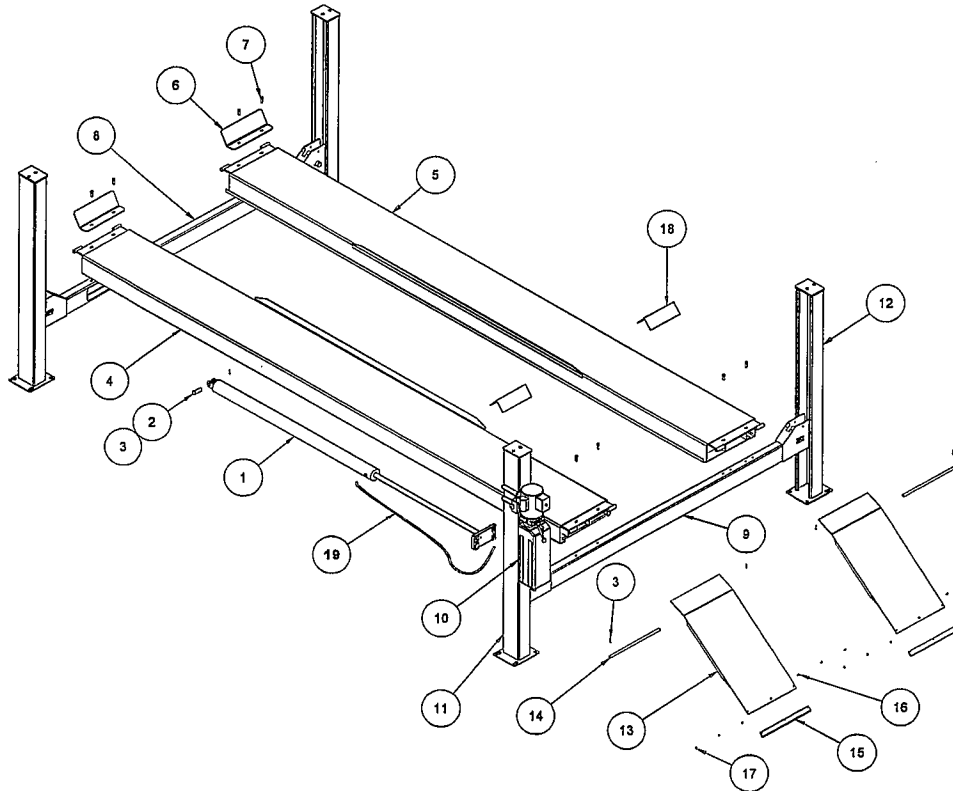
## Model 40000 Closed Front



### **IMPORTANT!!!**

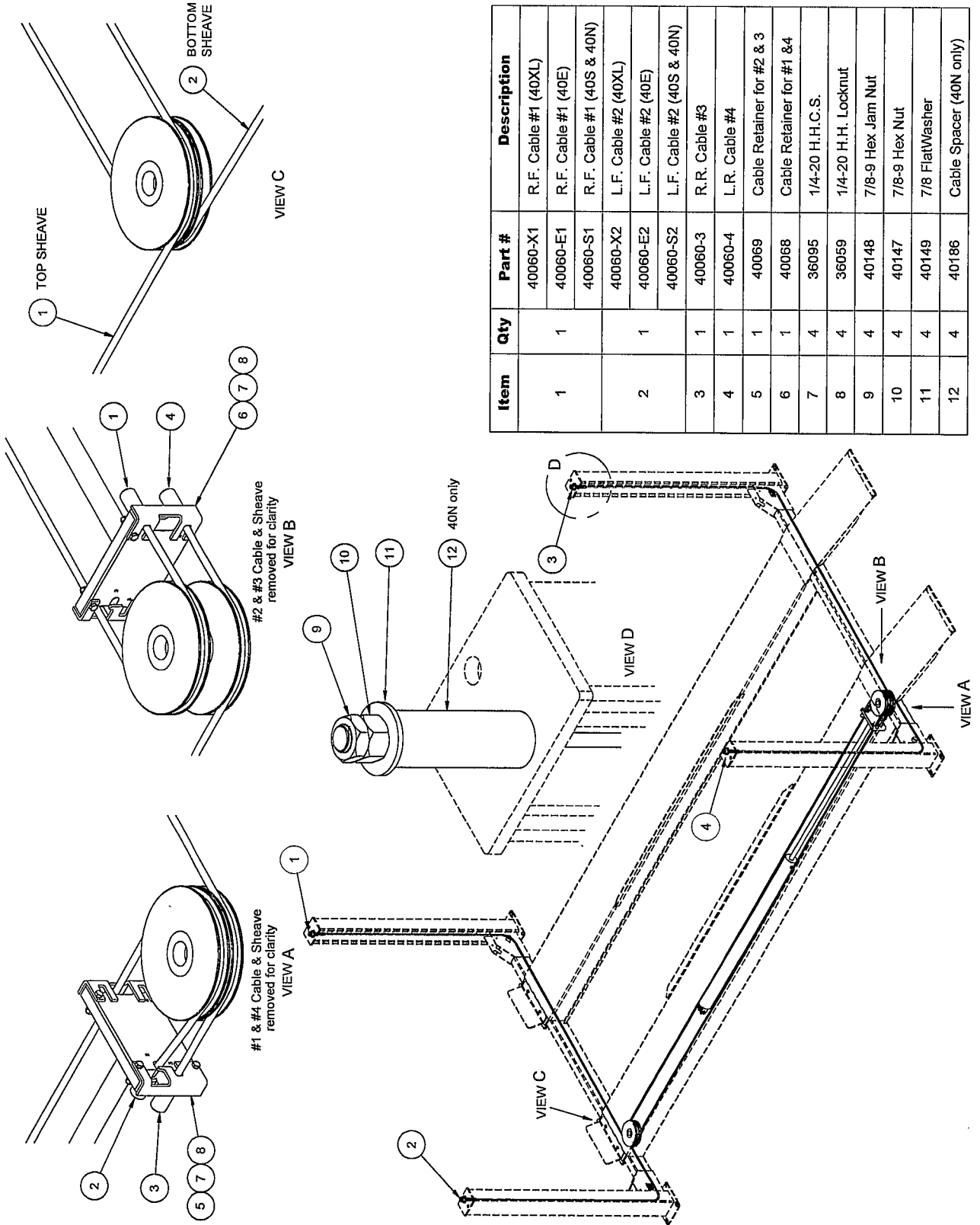
Replace all worn or broken parts with **genuine Challenger Lifts Inc.** parts. Contact your local *Challenger Lifts* parts distributor for pricing and availability. Call 502-625-0700 for the closet parts distributor in your area.

Model 40000 Closed Front  
Installation, Operation and Maintenance



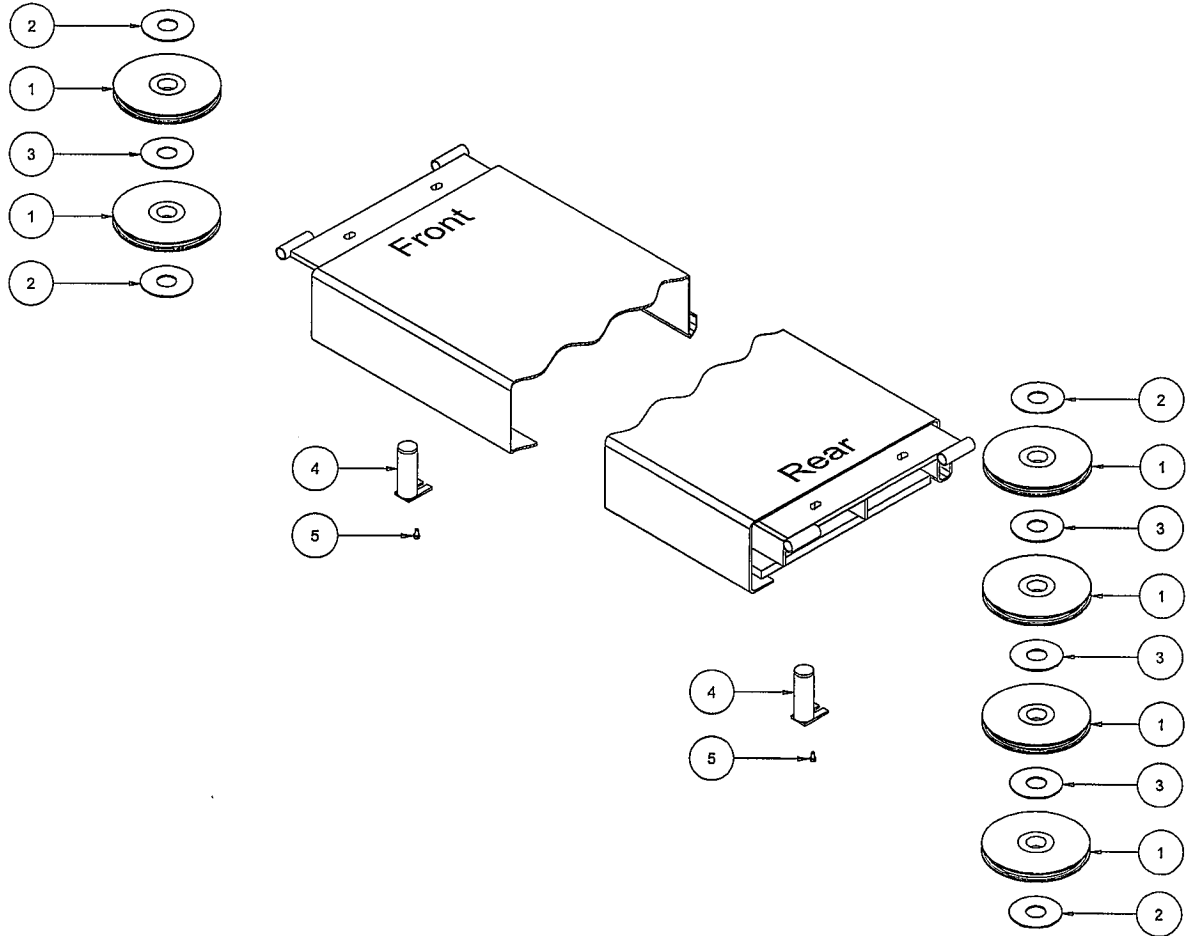
Item	Qty	Part #	Description
1	1	40080	Hydraulic Cylinder
2	1	40082	Clevis Pin
3	5	40126	Cotter Pin
4	1	40280	Flat Deck Power Runway (40X)
		40046	Flat Deck Power Runway (40E)
		40180	Flat Deck Power Runway (40S & 40N)
		40511	Alignment Power Runway (40X)
		40501	Alignment Power Runway (40E)
5	1	40283	Flat Deck Idler Runway (40X)
		40020	Flat Deck Idler Runway (40E)
		40177	Flat Deck Idler Runway (40S & 40N)
		40512	Alignment Idler Runway (40X)
		40502	Alignment Idler Runway (40E)
6	2	40266	Wheel Stop
7	8	40083	1/2-13 H.H.C.S. w/flange
8	1	40099	Front Cross Beam Assembly (40X, 40E & 40S)
		40191	Front Cross Beam Assembly (40N)
9	1	40100	Rear Cross Beam Assembly (40X, 40E & 40S)
		40192	Rear Cross Beam Assembly (40N)
10	1	31368-19	Power Unit 1Ø/208-230v/60hz
11	1	40159	Power Column
12	3	40160	Idler Column
13	2	40161	Entrance Ramp
14	2	40165	Entrance Ramp Hinge Pin
15	2	40188	Ramp slide
16	6	31062	1/4-20 Pan Hd Screw
17	6	40085	1/4-20 Hex Nut w/flange
18	2	40265	Wheel Chock
19	1	40081	Hydraulic Hose Assembly

# Model 40000 Closed Front Installation, Operation and Maintenance



Item	Qty	Part #	Description
1	1	40060-X1	R.F. Cable #1 (40XL)
		40060-E1	R.F. Cable #1 (40E)
		40060-S1	R.F. Cable #1 (40S & 40N)
2	1	40060-X2	L.F. Cable #2 (40XL)
		40060-E2	L.F. Cable #2 (40E)
		40060-S2	L.F. Cable #2 (40S & 40N)
3	1	40060-3	R.R. Cable #3
4	1	40060-4	L.R. Cable #4
5	1	40069	Cable Retainer for #2 & 3
6	1	40068	Cable Retainer for #1 & 4
7	4	36095	1/4-20 H.H.C.S.
8	4	36059	1/4-20 H.H. Locknut
9	4	40148	7/8-9 Hex Jam Nut
10	4	40147	7/8-9 Hex Nut
11	4	40149	7/8 FlatWasher
12	4	40186	Cable Spacer (40N only)

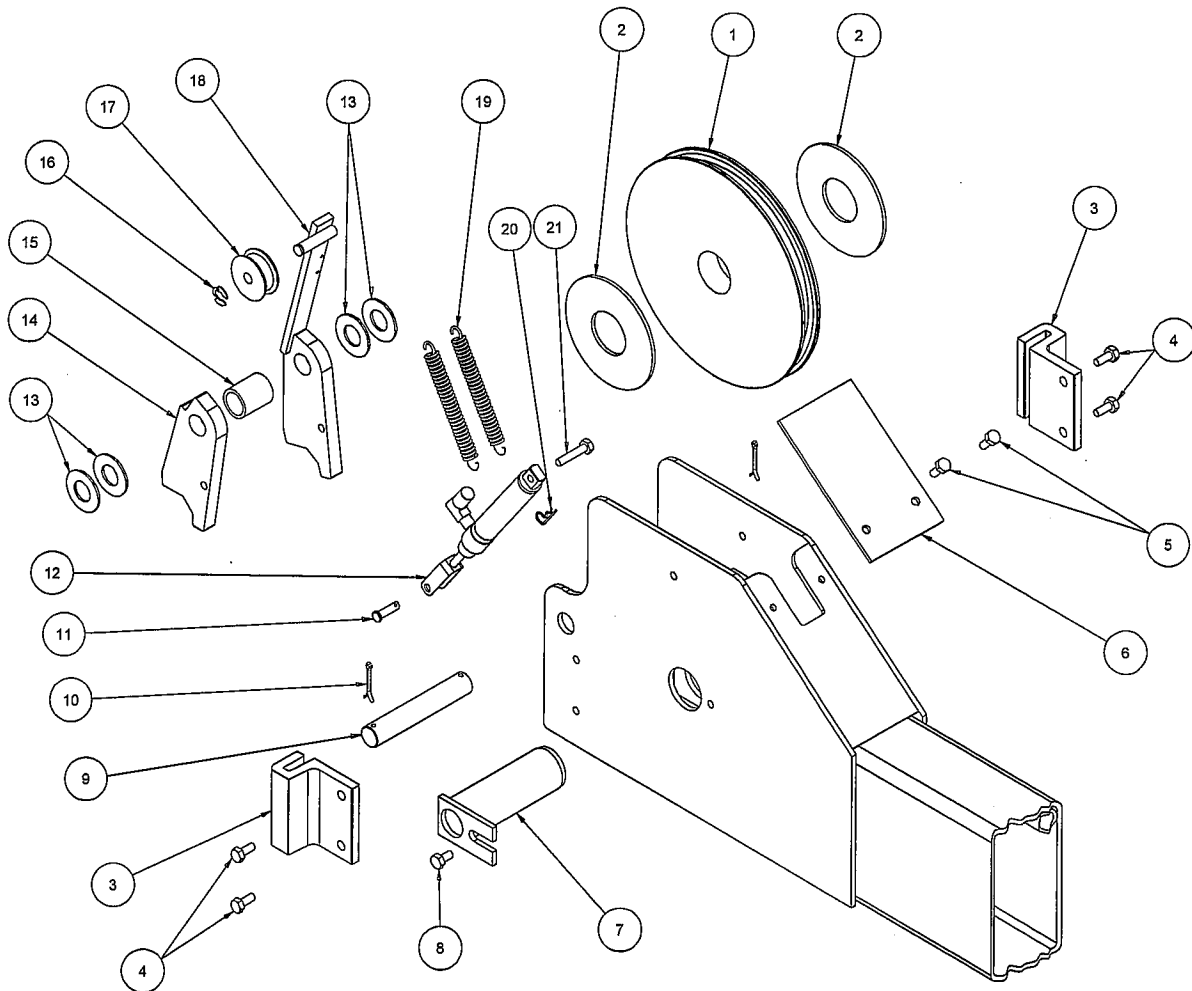
Model 40000 Closed Front  
Installation, Operation and Maintenance



Item Number	Quantity	Part Number	Description
1	6	40050	Sheave
2	4	40054	Thin Bearing
3	4	40053	Thick Bearing
4	2	40055	Sheave Pin Weldment (runway)
5	2	31188	5/16-18 H.H.C.S.

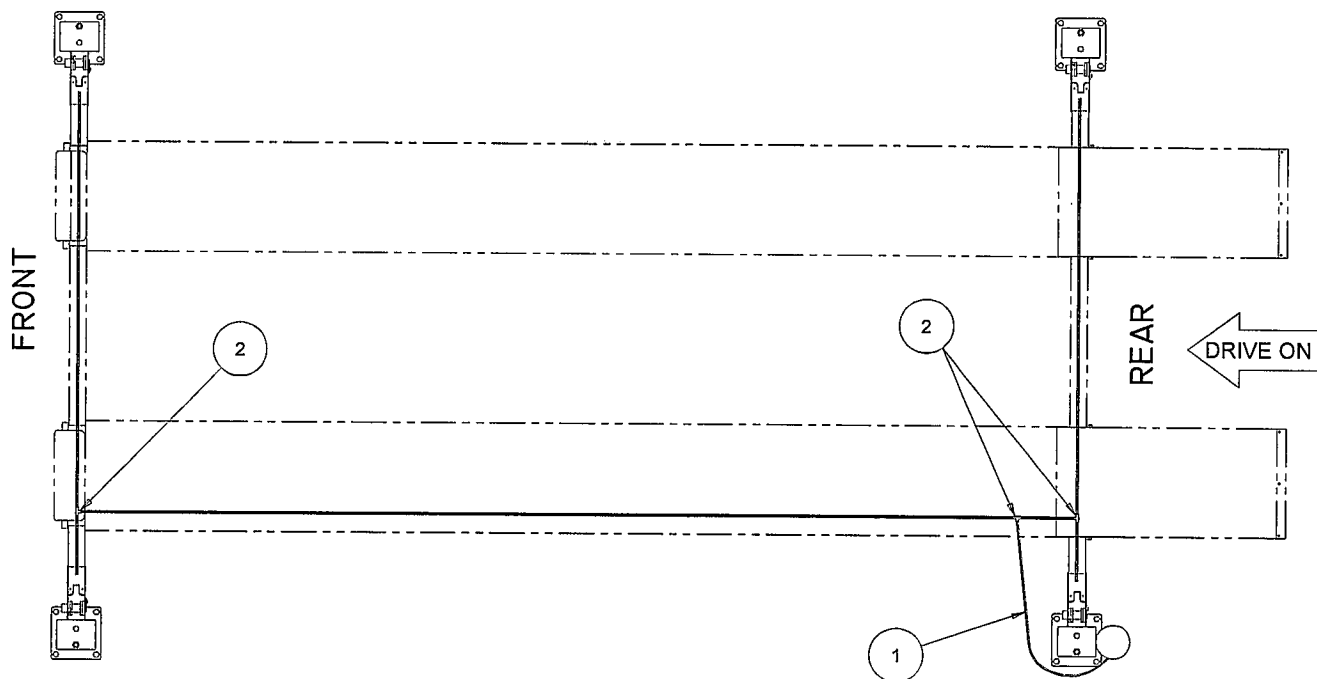


Model 40000 Closed Front  
Installation, Operation and Maintenance

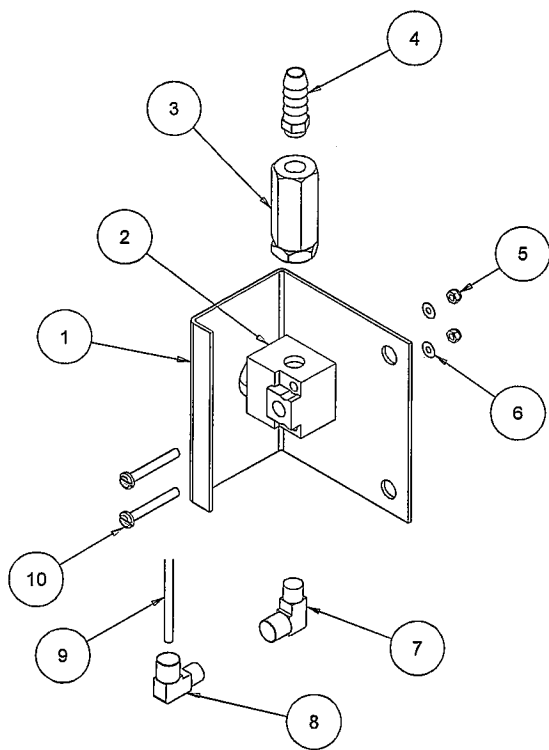


Item Number	Quantity	Part Number	Description
1	1	40050	Sheave
2	2	40053	Thick Bearing
3	2	40118	Slide Block
4	4	31188	5/16-18 H.H.C.S.
5	2	40120	1/4-20 Self Tap Screw
6	1	40122	Rubber Guard
7	1	40116	Sheave Pin (crossbeam)
8	1	31188	5/16-18 H.H.C.S.
9	1	40127	Ladder Lock Pivot Pin
10	2	40126	Cotter Pin
11	1	40123	Clevis Pin
12	1	40141	Air Cylinder Assembly
13	7	40128	Steel Bushing
14	1	40131	Ladder Lock
15	1	40132	Spacer
16	1	40137	Retaining Ring
17	1	40135	Roller
18	1	40134	Slack Cable Latch
19	2	40139	Extension Spring
20	1	40124	Hair Pin
21	1	40125	1/4" Dia. Shoulder Bolt

Model 40000 Closed Front  
Installation, Operation and Maintenance

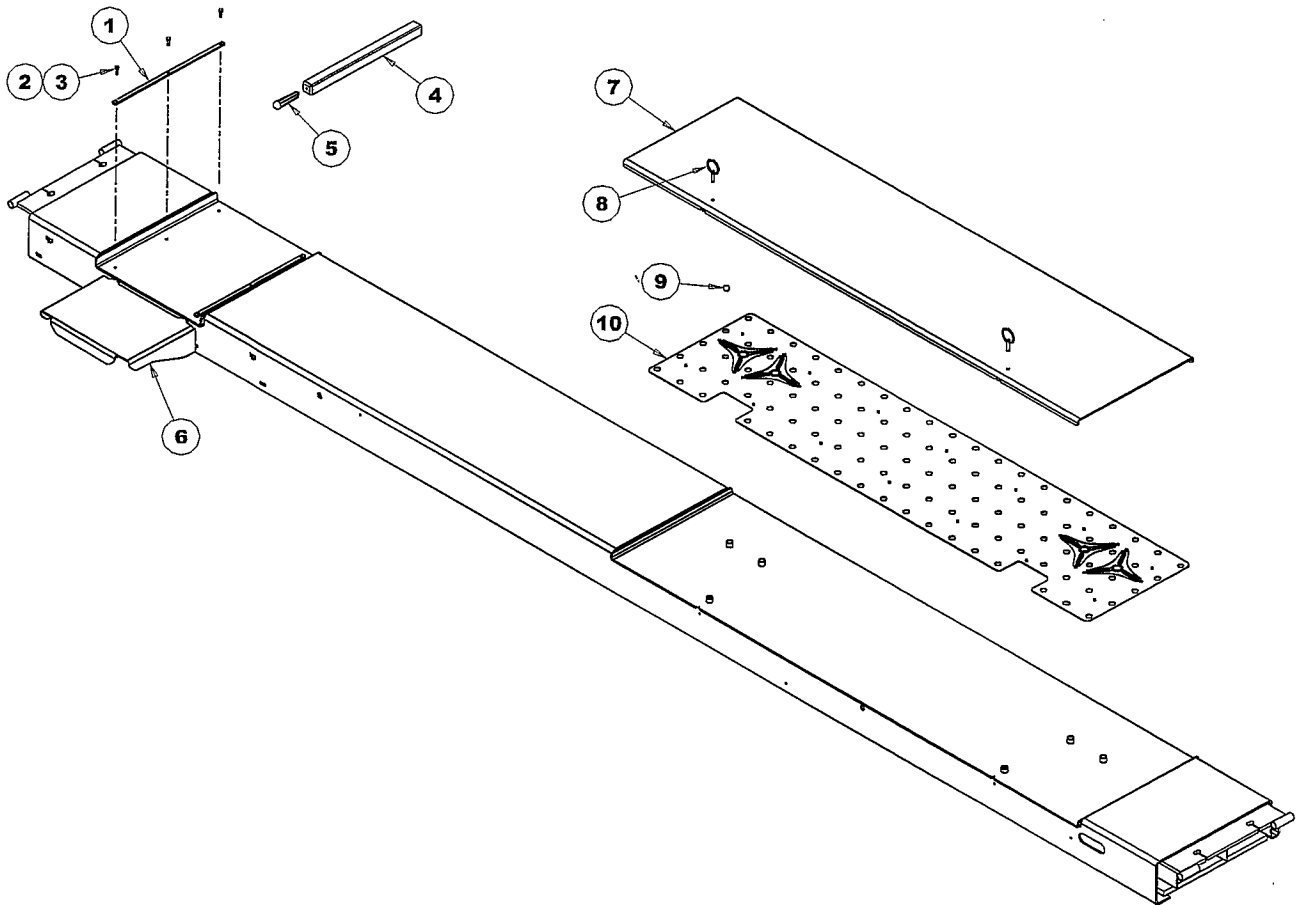


ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION
1	1	37035	1/8" Air Line
2	3	37032	1/8" Union Tee



ITEM NUMBER	QUANTITY	PART NUMBER	DESCRIPTION
1	1	37015	Button Valve Bracket
2	1	37016	Air Valve
3	1	40091	In-Line Air Filter
4	1	37021	Hose Barb
5	2	37023	8-32 Hex Nut
6	2	37024	#8 Lock Washer
7	1	37020	1/8 NPT Street Elbow
8	1	37019	1/8 NPTM to 1/8" Air Line
9	3	37035	1/8" Air Line to Runway
10	1	37022	#8-32x 1 1/4" Lg Pan Hd Screw

Model 40000 Closed Front  
Installation, Operation and Maintenance



Item	Qty	Part #	Description
1	4	40291	Guide Bar
2	12	40299	#10-24 x 1" Soc.Hd.Cap Screw
3	12	055-127	#10-24 Hex Lock Nut
4	2	40296	Drop-In Spacer
5	2	40295	Handle
6	2	40506	Work Step
7	2	40530	Rear Slip Plate Weldment
8	4	40220	Pin Assembly
9	196	40211	3/4" Dia. Ball
10	2	40525	Ball Retainer Assembly
	2	40526	Ball Retainer Sheet
	28	40527	Stand-Off Pin
	28	40528	Stand-Off Spacer (Grommet)
	24	40221	1/2" Dia. Extension Spring
	8	40219	7/8" Internal Tooth Lock Washer